

CLAIMS

1. A method of preventing or reducing temperature gradient caused bending of a structural element made of a material capable of withstanding heating to a specific temperature for an extended period of time, when heating said element to said specific temperature, said structural element being connected to an adjacent supporting structural element through a high temperature resistant supporting body, comprising the steps of providing said structural element, providing said high temperature resistant supporting body as a pultruded profiled body including a solidified high temperature resistant resin and reinforcing fibres at least a part of which being constituted by fibres exhibiting high strength and high stiffness at a low temperature and a reduced strength and a reduced stiffness when exposed to and possibly deteriorated at said specific temperature and fixating said structural element relative to its supporting structure by means of said pultruded body.
2. The method according to claim 1, said supporting structural element being an underlying building element or structural element or a structural element similar to said first-mentioned structural element.
3. The method according to any of the claims 1 or 2, said structural element being a metallic plate of a fire-resistant door.
4. The method according to any of the claims 1-3, said reinforcing fibres including glass fibres, carbon fibres or kevlar fibres capable of withstanding heating to said specific temperature and polymer fibres, natural fibres such as hemp, or combinations thereof or glass fibres having an exterior coating of polymer non-capable of withstanding heating to said specific temperature.
5. The method according to any of the claims 1-4, said specific temperature being in the order of 300-1000 C⁰ such as 400-1000 C⁰, 300-400 C⁰, 400-500 C⁰, 500-600 C⁰, 600-700 C⁰, 700-800 C⁰, 800-900 C⁰ or 900-1000 C⁰.

6. The method according to any of the claims 1-5, said resin body being made from polyester, vinylester, phenol, epoxy or combinations thereof.

5 7. The method according to any of the claims 1-6, said pultruded body including one or more zones including said at least part of said fibres for allowing the deformation of said pultruded body at said specific zones.

10 8. A pultruded body for use according to the method according to any of the claims 1-7, said pultruded body comprising a resin body including a solidified high temperature resistant resin and reinforcing fibres at least a part of which being constituted by fibres exhibiting high strength and high stiffness at a low temperature and a reduced strength and a reduced stiffness when exposed to and possibly deteriorated at said specific temperature.

15 9. The pultruded body according to claim 8, said reinforcing fibres comprising a first part including glass fibres, carbon fibres or kevlar fibres capable of withstanding heating to said specific temperature and a second part non-capable of withstanding heating to said specific temperature as said fibres of said second part be moulded or deteriorated as said fibres of said second part be constituted by polymer fibres
20 such as PE, PP, PVC or similar fibres, natural fibres such as hemp or glass fibres, carbon fibres or kevlar fibres having an exterior coating of polymer non-capable of withstanding heating to said specific temperature.

25 10. The pultruded body according to any of the claim 8 and 9, said pultruded body including one or more zones including said or at least part of said fibres for allowing the deformation of said pultruded body at said specific zones.

30 11. The pultruded body according to claim 10, said one or more zones being located at the centre of said pultruded body for providing a central deformation zone.

12. The pultruded body according to any of the claims 8-11, said pultruded body being fixated within metal end encasings exposing a central uncovered and insulating central part.

- 5 13. A method of producing a pultruded body according to any of the claims 8-12, said method comprising the steps of providing reinforcing fibres at least a part of which being constituted by fibres exhibiting high strength and high stiffness at a low temperature and a reduced strength and a reduced stiffness when exposed to and possibly deteriorated at said specific temperature, providing a resin and producing
10 said body from said reinforcing fibres and said resin in a pulltrusion process for providing said pultruded body and curing said pultruded body at a temperature without deteriorating said at least part of said fibres.